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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/170,225	10/13/1998	TSUTOMU SAWA	30220-048	6563

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EXAMINER

MCALLISTER, STEVEN B

ART UNIT	PAPER NUMBER
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3627

DATE MAILED: 08/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/170,225

Applicant(s)
Sawa et al

Examiner
Steven McAllister

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 20, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-5, and 7-10 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, and 7-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Continued Prosecution Application

1. The request filed on 5/20/2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/170,225 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 112

2. Claims 1, 3-5 and 7-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1 and 5 recite that the “projecting amount of the high hardness particles increases with the elasticity of the elastic material when a member to be fed is fed”. This suggests that the elasticity of the elastic material and the projection of the particles increases when a member is to be fed. Additionally, the phrase suggests that the projection of the particles increases when the articles are fed, but it is not clear how this would occur since the fed article puts a force into the belt and would actually tend to push the particle in. One of ordinary skill in the art would not be able to make the claimed invention without undue experimentation.

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3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3-5 and 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 5 are indefinite because the preamble recites the subcombination of a feed belt, but the body of the claim recites the combination of a feed belt and its associated feed system. The claims recite that the "pressure applied to the belt from an external source varies with the shape or hardness of the member to be fed", positively reciting that which is not part of the belt. It is not clear whether the applicant intended to claim the combination or the subcombination. The claims should be rewritten to positively recite either the combination or the subcombination. In examining the claims, it was assumed that the subcombination was claimed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frandsen in view of Arnold and Saylor, Jr

Frandsen shows an elastic material and high hardness particles dispersed throughout and projecting from the elastic material (Fig. 3). It inherently shows that the projection increases with increasing elasticity since greater elasticity allows for greater movement of the particles within the belt. It is further inherent that an external force (pushing from behind the belt as in Fig. 4B) would cause the projection to vary since the load pushes out on particles and stretches the belt. Frandsen does not explicitly show that the belt hardness is 15-90, that the particle size is 3-300 micrometers, or that the particle density is between 10-70 percent by weight. Arnold shows the use of material with a shore hardness of 15-90. It would have been obvious to one of ordinary skill in the art to modify the apparatus of Frandsen by giving the elastic material a hardness of 15-90 in order to provide for sufficient flexibility. Saylor shows particles with a size of 3-300 micrometers and a weight density of 10-70 percent. It would have been obvious to one of ordinary skill in the art to further modify the apparatus of Frandsen by using particles with a size of 3-300 micrometers and a weight density of 10-70 percent in order to a sufficient coefficient of friction.

As to claim 3, it is noted that Arnold discloses a filament in the central portion of the belt (see Fig. 8B).

As to claim 4, Frandsen in view of Arnold and Saylor, Jr. disclose all elements of the claim except the filament disposed on the driving surface. However, it would have been an

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obvious matter of design choice to place the filament on the driving surface side since it does not appear that the specific placement solves any specific problem or is for any particular reason and it appears that the belt would perform equally well with the filaments located in either location.

7. Claims 1, 3-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold in view of Saylor, Jr.

Arnold shows a belt with an elastic base material layer 86, the layer having a hardness of between 15 and 90 (col. 10, lines 10-20) and a second layer 82 (col. 10, lines 10-20). It does not show a particle containing layer, the layer 10-70% of its weight composed of 3-300 micrometer particles. Saylor, Jr. shows a layer 16 with 3-300 micrometer sized particles (col. 3, lines 57-61) and comprising 10-70% of the weight of the layer (col. 3, line 40 - col. 4, line 30). It would have been obvious to one of ordinary skill in the art to modify the second elastic layer 82 of Arnold by adding the particles as taught by Saylor, Jr. in order to provide enhanced friction on the load surface of the belt. It is inherent that under various load conditions (caused for instance by conveyed materials of different shapes or hardnesses) the particles will project various amounts due to the resiliency of the rubber because the greater pressures will cause a greater load on the individual particles.

As to claims 3 and 7, it is noted that Arnold discloses a filament in the central portion of the belt (see Fig. 8B).

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As to claims 4 and 8, Arnold in view of Saylor, Jr. disclose all elements of the claim except the filament disposed on the driving surface. However, it would have been an obvious matter of design choice to place the filament on the driving surface side since it does not appear that the specific placement solves any specific problem or is for any particular reason and it appears that the belt would perform equally well with the filaments located in either location.

As to claim 9, it is noted that the hardness of the second material is less than the hardness of the first.

8. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frandsen in view of Arnold and Mashimo et al (4642082)

Frandsen shows an elastic material and high hardness particles dispersed throughout and projecting from the elastic material (Fig. 3). It inherently shows that the projection increases with increasing elasticity since greater elasticity allows for greater movement of the particles within the belt. It is further inherent that an external force (pushing from behind the belt as in Fig. 4B) would cause the projection to vary since the load pushes out on particles and stretches the belt. Frandsen does not explicitly show that the belt hardness is 15-90, that the particle size is 3-300 micrometers, or that the particle density is between 10-70 percent by weight. Arnold shows the use of material with a shore hardness of 15-90. It would have been obvious to one of ordinary skill in the art to modify the apparatus of Frandsen by giving the elastic material a hardness of 15-90 in order to provide for sufficient flexibility. Mashimo et al show particles with

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a size of 3-300 micrometers and a weight density of 10-70 percent (col. 3, lines 50-68). It would have been obvious to one of ordinary skill in the art to further modify the apparatus of Frandsen by using particles with a size of 3-300 micrometers and a weight density of 10-70 percent in order to improve wear characteristics.

As to claim 3, it is noted that Arnold discloses a filament in the central portion of the belt (see Fig. 8B).

As to claim 4, Frandsen in view of Arnold and Mashimo et al disclose all elements of the claim except the filament disposed on the driving surface. However, it would have been an obvious matter of design choice to place the filament on the driving surface side since it does not appear that the specific placement solves any specific problem or is for any particular reason and it appears that the belt would perform equally well with the filaments located in either location.

9. Claims 1, 4, 5, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mashimo et al.

Mashimo et al shows a base layer 115; and a second layer 112 containing high hardness particles 122 having a size of 3-300 micrometers where the particles are 10-70 percent by weight of the layer. It inherently shows that the projection increases with increasing elasticity since greater elasticity allows for greater movement of the particles within the belt. It is further inherent that an external force (from the side opposite the side from which the particle projects) would cause the projection to vary since the load pushes out on particles and stretches the belt. Mashimo et al do not explicitly show that the hardness of the layers is 15-90 shore hardness.

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However, it is notoriously old and well known in the art to use rubber of such hardness in order provide for suitable flexibility.

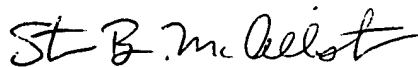
As to claims 4 and 8, Mashimo et al show a filament on the driving surface side.

As to claim 10, it is inherent that the material of the first elastic layer 115 is softer than the material of the second layer 112 because the first layer is a cushion layer and the second layer must take external loads and wear. Alternatively, it is notoriously old and well known in the art to make the first layer softer in order to provide a cushion and to make the second layer harder in order to have less wear.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven B. McAllister whose telephone number is (703) 308-7052.



Steven B. McAllister

August 22, 2002